

DATA CENTERS. REAL DEMAND. REAL IMPACT.

Communication infrastructure leaders must navigate power constraints, spectrum pressure, and resource competition.

- ✓ More demand.
- ✓ More strain.
- ✓ More risk.
- ✓ Plan today.



WHY COMMUNICATION LEADERS SHOULD PAY ATTENTION



POWER CONSTRAINTS

Data centers are one of the fastest growing sources of electricity demand, competing with network expansion.



WATER DEMANDS

Cooling requirements drive significant water use—straining local supplies.



SPECTRUM & NETWORK PRESSURE

Rising digital traffic from data centers increases backhaul, latency, and spectrum demand.



RARE & CRITICAL MATERIALS

Fiber, copper, batteries, and rare minerals are being re-allocated to support data center buildouts.



HIGHER COSTS & DELAYS

Resource competition drives up costs and can delay network projects.

THE SCALE OF EXPOSURE



10+ STATES

Propose data centers near major network hubs, driving localized infrastructure strain. (Deloitte, 2024)



20-30 GW BY 2030

U.S. data center power demand growth projection—rivaling the total load of multiple large metros. (McKinsey, 2023)



UP TO 6 BILLION GALLONS/DAY

Potential U.S. water use for data center cooling by 2030—enough to supply millions of homes. (TLG, 2023)



2-3X NETWORK TRAFFIC GROWTH

Data center interconnect and backhaul traffic growing faster than overall internet traffic. (Cisco, 2024)



CRITICAL MATERIAL PIPELINE RISK

Copper, fiber-grade glass, lithium, and rare earths face supply constraints and longer lead times. (IEA, 2024)

THE PREDATORY DEVELOPMENT LIFECYCLE

1



THE PROMISE

Huge investment. Jobs. Tax revenue. In exchange: abatements, zoning, water, power.

2



THE COMMITMENT

Ground is broken. Infrastructure is built. At this point, your leverage flips—walking away becomes costly.

3



THE RENEGOTIATION

Developers seek changes—more power, more water, relaxed standards. Can you still say no?

4



THE RESIDUAL RISK

If the project fails or investors exit, the community is left with stranded assets, lost revenue, and long-term obligations.



Once committed, communities carry the downside. Investors capture the upside.

RESOURCE COMPETITION IMPACTS YOUR NETWORKS



POWER

- Competes with network expansion and edge deployments
- Grid interconnection delays
- Higher energy costs



WATER

- Cooling strains local supplies
- Drought risk impacts facility operations
- Increased compliance costs



MATERIALS

- Fiber, copper, and specialty glass in high demand
- Battery and rare mineral supply constraints
- Longer lead times



CAPACITY & COST

- Higher construction and operating costs
- Longer deployment timelines
- Capital diverted from other projects



These constraints don't just affect data centers—they affect your ability to connect and serve customers.

A BETTER WAY: THE REGISTERED CAPITAL BOND (RCB)

If developers use projected benefits to get public concessions, they should financially back those promises up front.

RCB

=

PROMISED
PERMANENT FTEs

×

PROMISED
AVERAGE SALARY

×

STABILITY
PERIOD
(e.g., 10 years)

HOW IT WORKS

- ✓ Developer funds bond into a third-party escrow before concessions take effect.
- ✓ Bond is tied to jobs, taxes, water, power, and connectivity commitments.
- ✓ Annual independent audits verify performance.
- ✓ If commitments are met, bond is fully returned at end of term.

DEFAULT TRIGGERS (EXAMPLES)

- ✗ Project does not open or ceases operations.
- ✗ Employment falls below 80% of promised levels.
- ✗ Failure to meet tax obligations while receiving abatements.
- ✗ Environmental commitments or water-use limits are breached.



The bond stays with the community—not a lawsuit. It turns promises into performance.

WHAT COMMUNICATION LEADERS CAN DO



ENGAGE EARLY

Participate in site selection, planning, and resource discussions. Your input matters.



ASSESS NETWORK IMPACTS

Quantify effects on congestion, latency, backhaul capacity, spectrum, and reliability.



BUILD COALITIONS

Work with utilities, municipal leaders, and peers to advocate for balanced, transparent deals.



SUPPORT STRONG SAFEGUARDS

Back policies like the Registered Capital Bond to protect networks and communities.



PLAN FOR CONTINGENCIES

Include resource risk and infrastructure risk in long-term network planning and investment decisions.



Scan to learn more about protecting communication infrastructure and managing risk.
ferndon.com

**RISK TODAY.
RESILIENCE TOMORROW.**

SOURCES

Deloitte, 2024; McKinsey, 2023; TLG, 2023; Cisco, 2024; IEA, 2024; Uptime Institute, 2024; Brown & Caldwell, 2023; Lawrence Berkeley National Laboratory, 2024; ACCA, 2024; S&P Global, 2024; Dominion Energy, 2023.